

PATENT
ATTORNEY DOCKET NO.: DIVER1200-3

Applicants: Jay M. Short
Application No.: 09/753,752
Filed: January 2, 2001
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In the Claims

1. (Currently amended) A process for identifying clones of a recombinant library produced from DNA derived from at least one uncultivated organism which express [a protein] an enzyme with a desired characteristic, comprising:

screening in the liquid phase a library of expression clones randomly produced from DNA of at least one uncultivated organism, said screening being effected on expression products of said clones to thereby identify clones which express ~~a protein~~ an enzyme with a desired characteristic.

2. (Currently Amended) The method of claim 1, wherein the DNA is optionally modified or mutagenized prior to formation of the recombinant library.

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3. (Currently Amended) A process of screening clones having DNA recovered from an uncultivated organism for to identify a specified protein expressed therefrom having a specified enzymatic characteristic, which process comprises:

screening for a specified protein enzyme characteristic in a library of clones prepared by

(i) recovering DNA selectively from a DNA population derived from at least one uncultivated organism by contacting the recovered DNA in liquid phase assay under hybridizing conditions with at least one hybridizing probe containing a full-length coding region sequence or a partial coding region sequence for an enzyme having the specified enzymatic characteristic ; and

(ii) transforming a host cell with the recovered DNA to produce a library of clones; and

(iii) expressing the library of clones to obtain expression products which [is] are screened for the specified protein enzymatic characteristic.

Please add the following new claims:

-- 4. (New) The method of claim 3, wherein the DNA is modified or mutagenized prior to forming the library of clones.

5. (New) The method of claim 3, wherein the specified enzymatic characteristic is selected from pH stability, temperature stability and substrate specificity. --